



UXO
Center of Excellence



***An Overview:
The Unexploded Ordnance
Center of Excellence***

www.UXOCOE.BRTRC.COM

Agenda



- Background
- Mission Execution
- Activities



UXO Center of Excellence



Background



What is Unexploded Ordnance (UXO)?



Mines



Submunitions



Ordnance

- Buried
- Near Surface



UXOCOE Genesis



- Bosnia needs (Countermines highest USAREUR priority)

- Bosnia Technology Integration Cell

- Army Countermines Task Force

- BRAC & FUDS Cleanup

- Demining Initiatives and Landmine Ban

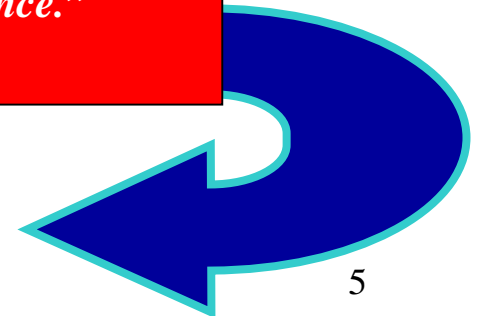
- Range Sustainment

• GAO Report - 95-197 - Sep 95
“A Coordinated Approach to Detection and Clearance is Needed”

- National Defense Authorization Act for Fiscal Year 1995:

“there is a need for a central authority to plan, oversee, and coordinate the R&D, and acquisition of the technology application to area ordnance clearance.”

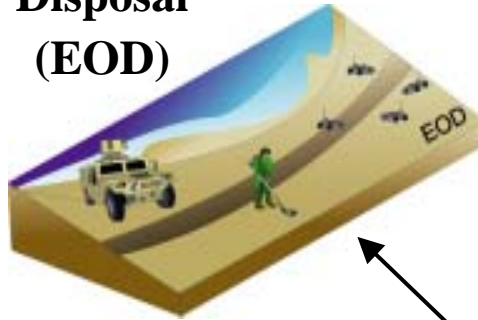
UXO Center of Excellence
Established by USD(A&T) – May 97



DoD UXO Mission Areas



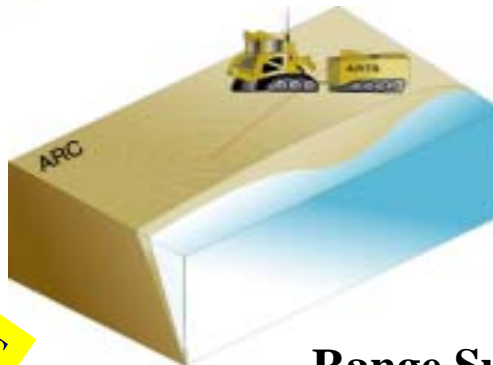
**Explosive Ordnance
Disposal
(EOD)**



**UXO
Environmental
Remediation
(UXO-ER)**



**BURIED TO DEPTHS OF 20 FT
OR MORE**

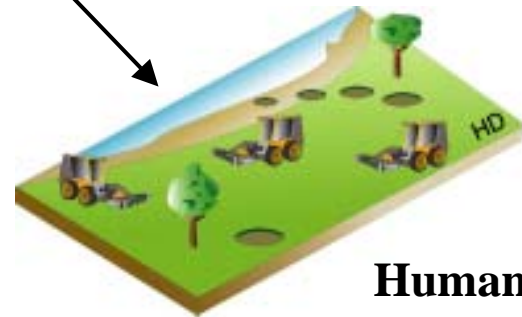


Range Sustainment (RS)

SURFACE & NEAR-SURFACE

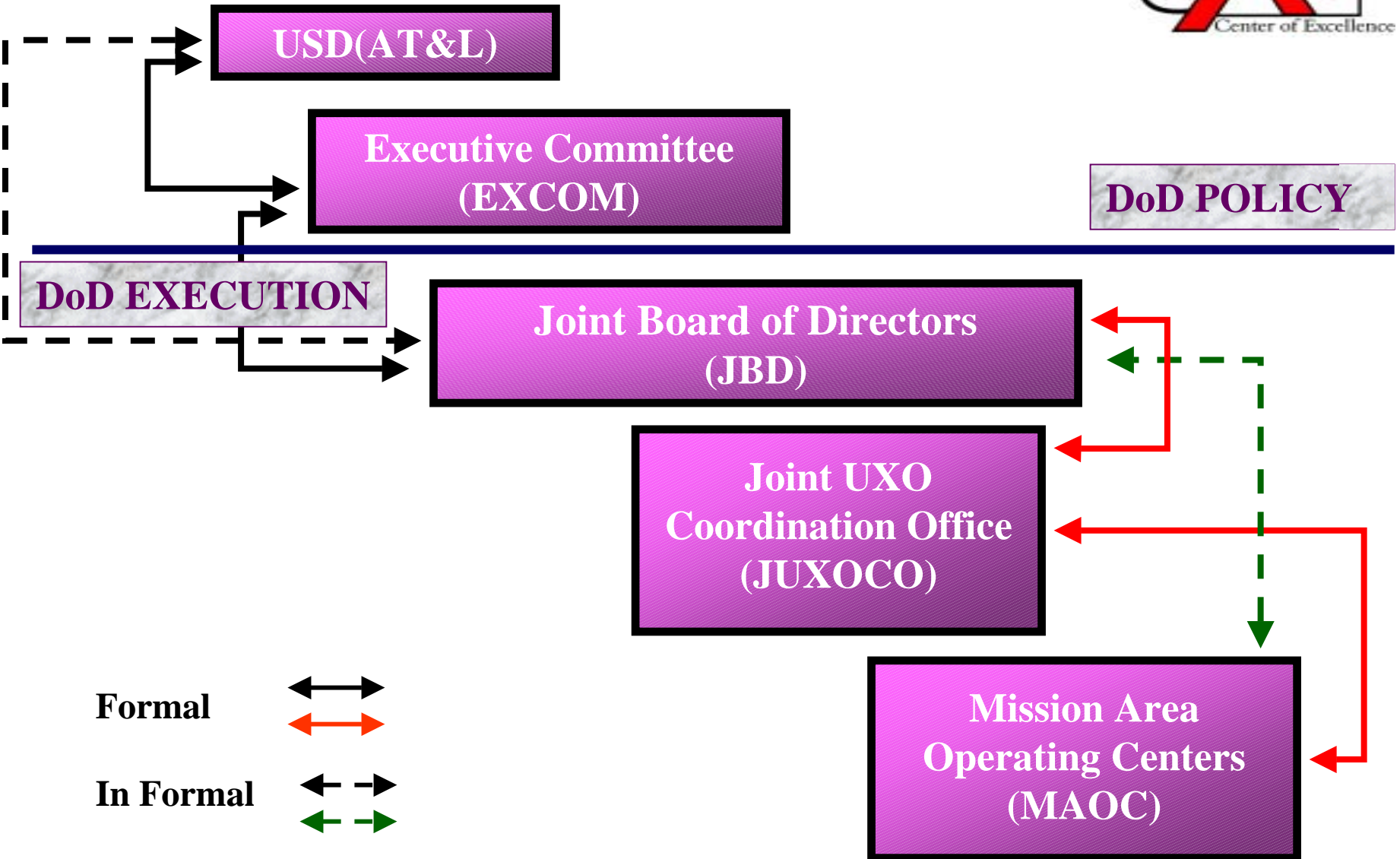


**Countermining
(CM)**



**Humanitarian
Demining
(HD)**

UXOCOE Structure



Current UXOCOE Membership



SECDEF	EXCOM	JBD	JUXOCO
USD (AT&L)			
D, DS	CHAIR - DR. LAMARTIN	REP – MR. SCHAEFFER	
DUSD(S&T)	REP - DR. HOLLAND	REP - DR. FOSTER	
DUSD (I&E)	REP - MR. DUBOIS	REP- MR. MEEHAN	REP - DR. AYORINDE
D, OT&E	REP - MR. CHRISTIE	REP- MR. CRISP	
USD (Policy)			
ASD (SO/LIC)	REP - MR. DOHENY	REP- MR. DOHENY	
C, JCS	REP – CDR HEINZE		
SEC ARMY	VACANT	VCHAIR – MG STEVENSON	DIR - DR. SPITZER
SEC NAVY	VACANT	REP-MG LUST	
NAVY		REP-MG VAN ANTWERP	D/DIR - MR. HERSEY
USMC		CHAIR- RDML(S) HICKS	REP - Capt BOURDON
		REP- RDML(S) LEFEVER	
		REP - Brig Gen USHER	
SEC AIR FORCE	VACANT	REP - Col FADOK	REP - VACANT

Executive Committee

(EXCOM)



- Chaired by the Director, Defense Systems (D,DS).
- Senior DoD officials provide guidance and oversight to the UXOCOE through the Joint Board of Directors (JBD).
- Resolves issues not resolved by JBD and makes recommendations to USD(AT&L).

Joint Board of Directors (JBD)



- Chaired on two-year rotational basis by the Army and the Navy (*As of October 1, 2003, Navy has suspended it's participation*). The Chair is from the Service opposite from the JUXOCO Director.
- Direct the day to day JUXOCO activities.
- Resolves programmatic issues among Military Departments and other DoD components.

Joint Unexploded Ordnance Coordination Office (*JUXOCO*)



- **Operating arm** of the DoD UXOCOEO.
- Coordinates within DoD's five mission areas Government Agencies, Industry, Academia, and International Organizations
 - Harmonize operational requirements with technological solutions.
 - Integrate and coordinate UXO research and development functions.
 - Avoid duplication, promote leveraging of technologies.
 - Develop and promote standards for testing, modeling and evaluation.
 - Produce and publish an Annual Report summarizing DoD's RDT&E activities in UXO Detection and Clearance.
 - Produce and publish biennially Strategic Science and Technology Roadmaps for UXO Detection and Clearance.

Mission Area Operating Centers (MAOC)



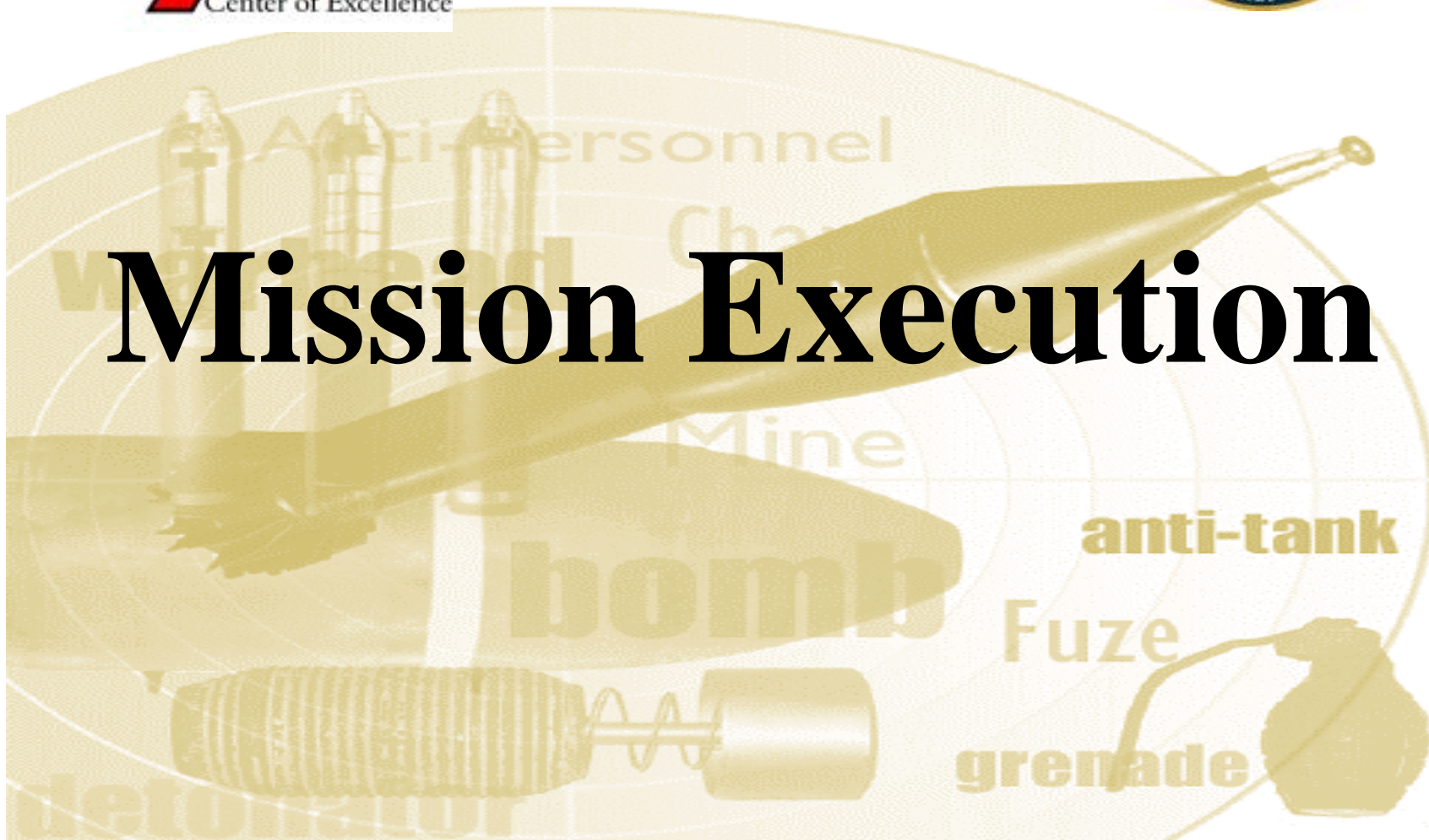
- Execute and manage their respective RDT&E programs
- Support the JUXOCO by identifying:
 - Existing RDT&E efforts.
 - Operational shortfalls and technology gaps.
- Serve as mission area experts (RS, CM, EOD, HD & UXO-ER).



UXO Center of Excellence



Mission Execution

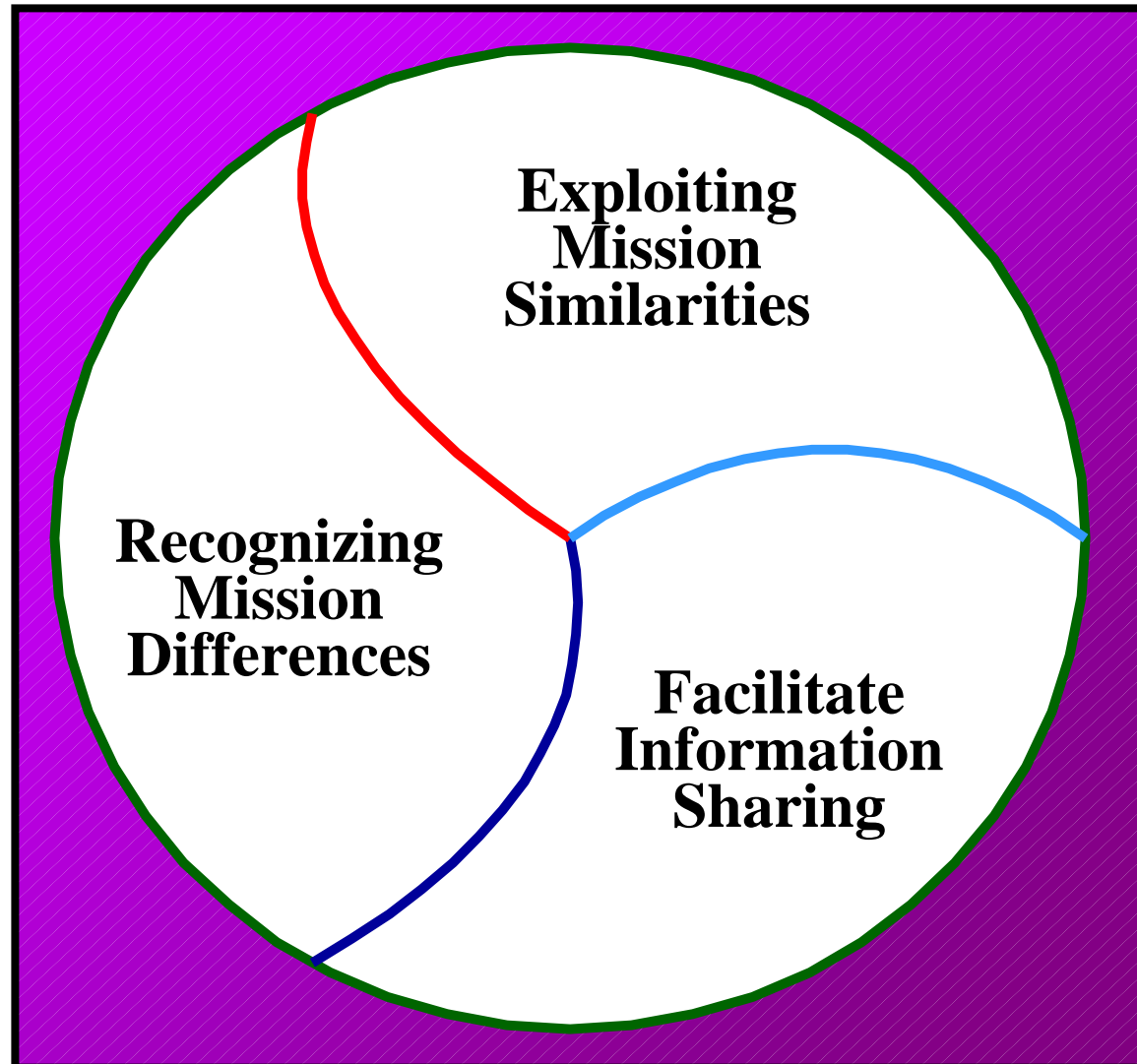


UXOCOE Mission



The UXOCOE will serve as the DoD's coordinated information clearinghouse for UXO requirements and programs; develop and promote standards for testing, modeling and evaluation; facilitate available, leveragable technologies for UXO detection and clearance; and publish an annual report summarizing the activities and accomplishments of the UXOCOE in order to improve the effectiveness and economy of UXO detection and clearance RDT&E throughout the DoD, by leveraging the efforts of other government and international agencies, academia, and industry.

How We Do It



Exploiting Mission Similarities



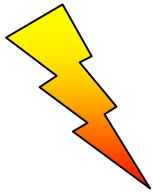
Counter-Mine
(CM)

Explosive
Ordnance
Disposal (EOD)

Humanitarian
Demining
(HD)

Environmental
Remediation
(UXO-ER)

Range
Sustainment
(RS)



CM



Universal Similarities

**Increase Detections – Decrease False Alarms
by use of:**

- Signal Processing
- Discrimination
- Automatic Target Recognition
- Sensor Fusion

UXO-ER



Recognizing Mission Differences



UXO-ER



COUNTERMINE



Differences

- **Metallic Targets**
- **Surface and Deeper Targets**
- **Post Processing of Detection Data**
- **Standard/Off-The-Shelf Hardware**
- **Regulatory Oversight/Acceptance**

- **Metallic & Non-Metallic Targets**
- **Near-Surface Targets**
- **Real Time/On-The-Fly Processing**
- **“Ruggedized” Detection Equipment**

Facilitate Information Sharing



Workshops

Requirements
Technologies
Test Standards
Resources

International Involvement

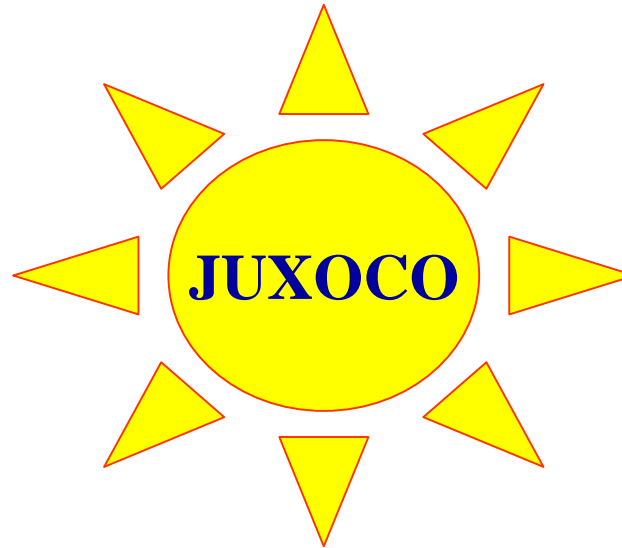
ABCA 5
TTCP
JRC
ITEP

Industry Involvement

NAOC

Interagency Involvement

Dept. of Homeland Security
Dept. of State



UXO Database

Targets
Protocols
Formats
Technical Papers
Website

Conferences & Conventions

The UXO/CM Forum

Newsletters

NVESD Bulletin
Ordnance Explosives Environment
ACSIM Installations



UXO

Center of Excellence



Activities



Activities



- UXOCOE Customer Outreach and Support
 - DoD
 - Other Government Agencies
 - Industry
 - International
- Center of Excellence for Testing
 - Ft. A. P. Hill Data Acquisition Site
 - Standard Test protocols
 - Data Analysis/Modeling
 - Joint Airborne Wide Area Test Site (JAWATS)

Activities



- JUXOCO Sponsored Workshops and Meetings

- Joint Board of Directors Meetings
- Multi-University Research Initiatives
- Improvised Explosive Device Workshop
- UXO-ER Technology Workshop
- UXOCOE Resource Managers Meeting
- Sixth Annual Army Landmine Basic Research Technical Review Meeting

- JUXOCO Web Site

- Requirements
- Potential Solutions
- Reports Library
- Commercial Opportunities
- Data acquisition site scheduling
- Sensor data archives

UXOCOE Web Site
www.UXOCOE.brtrc.com

Summary



- DoD established the UXOCOE to coordinate UXO clearance RDT&E across five diverse mission areas.
- JUXOCO - the operating arm for UXOCOE - is a coordination office, not a program office.
- JUXOCO emphasizes information sharing, technology comparisons, and standardized testing.